An inaugural dissertation on the disease
termed

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Cholera Infantum

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of
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Cholera Infantum

Amid the several disorders which attack mankind in passing from infancy to decrepitude, there is none perhaps which presents stronger claims to our attention than the subject of the following Essay.

The peculiarly interesting period of attack, and the manifest alarming symptoms which characterize Cholera Infantum, have engaged a large portion of professional attention and caused it to be classed with the most dangerous affections incident to childhood; its march is rapid, and traces of its severe afflictions and widely spread desolution are annually apparent.

I conceive it unnecessary to attempt any further demonstration of its importance, as I feel confident that it will be admitted by all who have witnessed cases of it: or will reflect on the tender part of our species on which it exclu=

sively delights to prey - incapable from the delicacy of their frames, and weakness of their constitutions, successfully to combat the depressing influence of any morbid action. A full and perfect acquaintance with a disease so frequent and so formidable, and which from its fatality strikes so directly to the root of domestic happiness, often nipping in the bud the expanded hopes, and the bright but illusive anticipations of fond and devoted parents, must be obvious to every practitioner, more especially to those who are just entering upon the Arena of their profession -

In making this malady the particular subject of my consideration, I have not been flattered with the hope of being able to advance any thing new or original, either as to its pathology or proper method of cure, nor am I so far a lover of novelty as to grasp at any new hypothesis, or indulge in idle speculations, which are not calculated to add to the essential utility of Medical Science, to soothe the afflictions, or to extend the comforts of my fellow creatures; but I foster the belief that if I have succeeded in my effort to give a detail of the experience of others, and to exhibit in a form as concise as possible, the testimony of those whose writings

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afford interesting information on this important malady, I have not laboured in vain on the score of Utility, whilst endeavouring to comply with the requisitions of our University.

Cholera Infantum or as it is commonly designated amongst us the Vomiting and purging of children, which from the regularity of its appearance in the summer months is likewise known by the name of the Summer complaint of Children, is a modification of the Cholera and remittent fever of adults; the distinction implied by the word Infantum is of modern date; it is not used by Boerhave, Cullen, Sydenham nor Cleghorn, The two last authors mention children being affected by Cholera Morbus, Boerhave in his aphorisms, nor Cullen in his first lines, do not mention children at all in their account of Cholera, from this it is evident that they intended to include the Vomiting and Purging of Children under the general title of Cholera Morbus. This disease makes its appearance sooner or later, according to the season and section of the Country in which it is found, With us it seldom shews itself before the Middle of June or the first of July,

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and continues throughout the summer months occasionally, not ceasing its ravages before the cooler days of Autumn or the frosty months of September, and October, its frequency and danger being usually proportionate to the heat of the weather. It affects children from the first or second week after birth, until their second year, but most commonly seizes upon them from the age of five, to that of eighteen or twenty months, occurring rarely in country places, (except such as are favourable to the production of Autumnal fevers) or thinly settled villages. It seems almost to be exclusively appropriated to Towns and Cities.

The children of the poorer classes of society, who live in confined and ill-ventilated houses exposed to the destructive effects of improper diet, and clothing, suffer most, It is, however, by no means confined to this class of persons, for so general and pervading is its influence, that those children who enjoy the advantages of large cool houses, of comfortable clothing, of cleanliness and of a wholesome and well regulated diet, can only be said to be less exposed.

Considering the causes of this disease I shall merely divide them into the remote or predisposing, and exciting or

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occasional. The predisposing cause seems to be a peculiar condition of the atmosphere, and the most usual exciting causes are improprieties in diet and clothing, aggravated by teething worms, early weaning &c. The division here made, will not always be found practically correct, a remote cause may, and sometimes does, act as an exciting cause and vice versa, there being only exceptions which do not invali=date the general rule.

As a just knowledge of the causes mention=ed, which operate in the production of this disease is of much impat=ance not only in the treatment, but likewise requisite in forming a correct prophylaxis, I conceive a more lengthy consideration of them will not be deemed inappropriate, and while thus indulging myself in this interesting part of our subject, I shall not over=look that important indication, brevity.

I have mentioned that Cholera Infantum seems to be almost exclusively confined to Towns and Cities, — here it is probably produced by the noxious exalations liberated by the warmth of the season, acting upon accumulations of filth, and dirt, and upon masses of vegetable matters in a state of decay, which are always to

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be found in those places, What the characteristic principles of these subtle materials are, which emanate from reservoirs of filth, eludes our researches, but combined with heat and moisture, they are capable of forming an infectious state of the atmosphere, which predisposes the system to disease; and children who are most susceptible, are generally the first victims to its morbid influence. As a remote cause capable of exciting a predisposition to an attack, the debility both general and local produced by a vitiated state of the atmosphere, been mentioned. But besides the state of the air produced by the operation of the causes mentioned, I apprehend there may be a peculiar distemperature in it produced either by an abstraction of some of its common principles or the addition of new ones, or perhaps by some other change in its chemical qualities or electrical condition which rendering it an unnatural stimulus, generates in it a capacity of exciting in the system a predisposition to derangement. But might it not be asked, why at this time, is a predisposition to disease excited in the child only?- By way of elucidating the foregoing interogatory I would propose another. Is not Cholera Infantum merely a modification of the cholera and remittent fever of adults?- From its appear-

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=ance at the same time with those diseases, and by the similarity of sy=
=mptoms which individually characterize them, I would answer in
the affirmative; admitting this fact, the appearance of Cholera Infan=
=tum earlier in the season than those diseases of adults, may be acc=
=ounted for by considering, that children are, from the weakness of
their constitutions, more predisposed to be acted upon by the remote cau=
=ses which produce them than adults, the digestive system in particular
from having an excessive function to perform in rearing the corporeal
fabric is more liable to frequent derangements.

The violent heats of Summer in conjunc=
=tion with sudden and vicissitudes or with exposure to a moist and vili=
=ated atmosphere is one of the most usual exciting, and was formerly reck=
=oned among the remote causes of this complaint. After very considerable
diminution of temperature the cutaneous organs, from the accumula=
=ted excitability which takes place to a greater or less extent, are rendered
more susceptible to the impression of heat, whilst sudden reductions
of temperature, whether arising from falls of rain, exposure of the
heated body to a current of air &c. produce similar results in the assi=
=milative organs. If we reflect for a moment on the intimate asso=

=ation, which exists between the external surface and some of the most important viscera of the humane structure, their action will at once appear obvious, as has been clearly demonstrated by most accu=rate experiment, and as Dr. Johnson says universally admitted, "that no impression can be made on the one, without having its influence almost immediately extended to the other" – Taking into view the season of the year that Cholera Infantum prevails, being not only remarkable for the high range of atmospheric temperature, as for the certain vacilla=tions from heat to cold, especially in the evenings, another exciting cause of common occurrence worthy of our attention will appear evi=dent, viz. improprieties in Clothing, which from the fashionable no=tion of mothers sacrificing the ease and comfort of the child to taste and elegance, their clothes, are often made too light – and so fashioned as to expose a greater part of their arms, neck, and even breast.

In looking over the exciting causes of some authors we find many enumerated such as Teething, Worms, Early weaning, &c – Though these causes are now regarded as exerting little influence in the production of Cholera, yet it would not be a miss for me to pause on the first. I mean Dentition – a process which

marks an important era, in the infantile state, and often the source of much general as well as local irritation, determining according to constitutional predisposition, sometimes to the brain, but more commonly engendering morbid affections of the digestive apparatus. Hence some have been disposed to consider dentition as the most probable source of this disease. But its presence before the commencement of this process; its absence under all the consequences of dental irritation; and its occurring at stated periods, are decisive of the question. It must be allowed however that in children labouring under the irritation of dentition this disease is more readily brought about and sometimes aggravated.— Hence Cholera Infantum is more severe at that period of life when the greater number of teeth make their appearance.—

If in the earlier ages of childhood the digestive system, is thus liable to incessant irregularities, and as it acts so prominent a part in the induction of disease from its widely spread sympathies, an attention to Diet, as belonging to those causes which operate directly on stomach is of some importance, it also deserves to be borne in mind "that the stomach looses with its healthy tone the capacity of discharging the function which Nature has allotted to it, viz.

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the proper digestion of the materials destined to afford necessary sup=
=ply of nutriment to the body. Now it is evident that those portions
of our aliment, over which the stomach and duodenum cannot exercise
the full power of digestion, must pass along the intestinal canal as fo=
=reign and irritating bodies. the mucous membrane lining the stom=
=ach and bowels being a secreting surface, when inordinately excited,
its secretions are irregular and morbid, for we know, when any gland
or secreting surface is overexcited the fluid secreted becomes unnatural in qu=
=antity as well as quality - always depraved. Thus a constant source of irrita=
=tion is generated in an important organ, whose derangement forms
the first link in the chain of morbid associations, communicated though
sympathy to the liver and other important organs, constituting in them
functional derangement; and as we shall hereafter see it is in a derang=
=ement and improper action in the secreting function of these viscera that
the disorder we are treating of consists -

Cholera Infantum makes its appe=
=arance in different ways, an infant when first affected with this com=
=plaint - exhibits a languid appearance, sleeping more than usual during the
day, and commonly cries upon being moved or taken up, little attention is

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generally paid to these circumstances, and the first symptoms, which give warning of the presence of the disease is a violent vomiting attended by febrile excitement. Sometimes the disease is ushered in by a diarrhœa, which continues for several days without any other symptoms of indisposition; but more commonly it makes its onset in a rapid and sudden manner with vomiting and purging. Nothing generally is vomited at first but its maternal milk in a very acid state, afterwards mucus and slime; if there be any bile discharged it follows quickly on the evacuation of the milk, then becomes mixed with mucous, and slimy materials, and soon entirely ceases. When the disease is ushered in, as it sometimes is, with purging, the stools consist at first of a light coloured fluid, succeeded in many cases by stools of a yellowish green, and curdy, or parti coloured (termed by nurses "of all colours") always mixed with a thin slime or mucus, sometimes mixed with dark or yellow bile; but the latter is by no means proportionate in quantity.— In others the evacuations from the first are bilious, occasionally streaked with blood, and often have a peculiar and unnatural odour, soon the quantity of green or yellowish fluids diminish, and the slimy or mucous discharges increase.— These last are very thin and copious, in some cases

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nearly as limpid as water, and often contain a white pulpy substance, but no bile, at least scarcely enough to stain the diapers; sometimes they have no smell, but most generally the smell is that of sourness or of putridity. "The irritability of the alimentary canal is so great in some cases, that the ingesta rapidly pass off unaltered as in Dientery"—

Frequently we have spasms as in Cholera Morbus of more advanced life, the child screams and draws up its legs and never appears easy in one posture; it is also attended with gripings and in violent attacks, general convulsions are not unfrequent:—the fever which soon supervenes, in its ordinary form, is of an irregular remittent character, the exacerbations taking place in the evenings—

An unequal distribution of temperature often exists, on the head, breast, and abdomen, it is greatly increased; while the extremities are generally below their natural temperature, and of a pale or bluish colour. The Pulse is usually small, quick and feeble, or irritated and corded, but rarely full strong or voluminous; the tongue in its appearance is

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very variable, often natural, sometimes white and furred, in the early stages dry and polished, and in those more advanced sometimes aphthous, — Thirst intense, and cold water when swallowed, is instantly rejected.

Determination to the brain sometimes take place early and is manifested by stupor or delirium; in some cases it produces symptoms not only of delirium, but of mania, insomuch that the child throws its head backwards and forwards, and sometimes makes attempts to scratch and bite its parents; the eyes are wild, and its countenance is expressive of the deepest anguish, As the disease advances the eyes loose their fierceness and lustre, and become more sunken and hollow, they are half closed during sleep, and such is the insensibility of the system in this disorder that "flies have been seen to alight upon eye when open, without exciting a motion in the eye lid to remove them".

We have few diseases where emaciation so rapidly supervenes, the child at first becomes pallid and the flesh flabby, and so completely is the flesh ultimately absorbed in some instances that the bones have been seen to come through the skin,

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and upon those parts which the body rests livid spots appear, followed by ulceration gangrene &c. the skin on the forehead is tight, nose sharp and lips shrivelled, with a strongly marked Hippocratic countenance the almost certain mark of the hand of death. Such is the picture of this formidable disease when it runs its full course; and even under such circumstances when immediate dissolution would seem to be denoted, yet life will in some instances be spared, and recovery ultimately take place.

Dissections clearly inform us of the nature and seat of Cholera Infantum. The principal and most usual phenomena that present themselves to our notice in Post Mortem examinations, are lesions more or less extensive, of the digestive system, with its appendages. Occasionally, however, the effects of previous inflammation may be traced throughout the whole of the alimentary canal, though it is confined most generally to the mucous membrane, dark livid spots are dispersed over the canal of the stomach and small intestines, particularly the duodenum near the pylorus. Nature sometimes attempts to relieve herself by throwing out coagulable lymph.

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which is sometimes found spread on their surface, or in detached pieces; in this way, sometimes the calibre of the tube is considerably reduced. The large intestines are usually less affected, except when the disease assumes the Dysenteric form.

Now and then appearances similar to those in the primæ viæ though to a less extent, may be seen upon the peritoneum.

The the hepatic system also claim's our attention. the liver under nearly all circumstances, especially in cases of long standing, is found unaltered in structure, though greatly enlarged in its dimensions, and when cut into, proves to be completely engorged with blood. The gall bladder is commonly filled with dark green, and sometimes with colourless bile; the other viscera of the abdomen are usually healthy; those of the thorax are rarely affected. In recent cases, the brain presents no morbid appearances except those of Congestion, but in those of a chronic character, effusions are often met with, constituting hydrocephalus internus.

Having now taken a brief view of the causes, symptoms and phenomena exhibited on dissection in this important disease, I shall proceed to make a few observations on

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its Pathology. This subject though of much importance is too extensive to be imbraced in the narrow limits of an Inaugural Dissertation. I shall therefore only in a general way give some account of its history without decending into detail.

It is well known the several processes of digestion are carried on by organs whose actions are rendered accordant and co-operative by means of a nervous connexion subsisting between them, which has been denominated sympathy, and it is by the agency of this sympathetic union that the quantity of fluid secreted, and the period of their secretions are adjusted. The food when taken into the mouth excites these, by its own stimulus, the action of the salivary glands, and it is by the same direct stimulus that the glands secreting the fluids of the stomach are affected. But as the liver and pancreas lie out of the reach of direct stimulation, they must be excited into action by an indirect impulse communicated from the stomach.

Now it is evident if any one of these functions become deranged it is liable to throw one or more

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of the others into disorder, thus the stomach may be disordered in its function by a cause directly applied to it, or may induce a corresponding derangement in the liver, or it may become so by means of the same sympathies, from a complaint commencing in this latter organ, "The function of the liver (says Dr Johnson) and stomach are so intimately linked, that a derangement of one organ, is very commonly productive of derangement in the other, and it is in practice difficult to say in many cases which has the priority" But from the consideration of the history, symptoms, and causes of this disease before us, there is the best reason to believe that the primary affection is confined to the stomach: This however is secondarily extended to other parts of the alimentary canal, soon communicating its impression to the liver.

When the stimulus of the irritation thus induced is at first moderately great, the immediate consequence is an increased vigour in the function of the gland, and a consequent secretion of bile is the result, this as has been said, is sometimes seen in the early stage of this disease, but when the

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stimulus is longer continued, or is from the beginning excessive; the secretory action instead of being increased, is diminished, or completely arrested. This is remarkable in the subsequent stages when the dejections uniformily indicate a deficiency of bile, under these circumstances the "blood sent to the liver the root of the portal circulation to supply the pabulum of its secretion, finding no outlet becomes of course obstructed, and a venous con=gestion of its branches, is the necessary consequence" This con=stitutes the apoplectic or engorged condition of the liver which is always found in post-mortem examinations. Upon the state of things here indicated it is that this disease chiefly depends.

Among the various sympathies with which the liver is intimately connected, there is none more remarkable than that in which the brain is concerned. By this sympathy is to be explained the impression made upon that organ, causing in it inflammation and as a necessary consequence hydropic effusion, constituting what has often been found in protracted cases of "Hydrocephalus Internus."

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modern Pathology and theories of medicine, that diseases are estimated not so much by their form and accidental phenomena, as by their history and supposed causes, and by their approximation to certain leading characters of morbid condition, under which they are classed. The practitioner after examining all the symptoms and diagnostic signs, which present themselves in any given case of importance, after endeavouring to appreciate the condition of the different systems of sensation, circulation, absorption, digestion &c. and considering the various circumstances, topical or general, which may vary their energy, or modify their action, reasons upon the most just and general relation of all these things, and makes a fair conclusion as to the intrinsic nature of the complaint; and it is to this abstract deduction, this inference that he directs his aim.

The same simplicity which marks all pathological principles extends to our opinions concerning remedial agency. Remedies are not now so much separated into different families, according to the various departments of the body to which they are destined, or according to the select diseases

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upon which they were once supposed to act, by some direct force or affinity; but they are used indifferently to controul the functions, to set up new actions, and to awake the vital energy, by the instrumentality of which alone, vigour and well being are restored.

Since writing these views of the pathology of this disease, I am indebted to Dr. Homer, for some novel opinions on the subject and take a pleasure in presenting them in this place.

The Doctor believing that the prevailing notions as regard the pathology of Cholera Infantum are by no means settled, was induced to look to some other organ save the stomach and liver as the fountain head from whence flowed all that train of symptoms constituting the disease: whilst engaged in prosecuting his investigations I had the pleasure of witnessing an autopsic examination which he made at the Phila Alms House during the month of August last. the case was a child of about 3 months old, who died labouring under the usual symptoms of Cholera of about 10 days duration; besides the appearances which commonly present themselves in these examinations, upon opening the large intestine the

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colon was found filled with pure pus of a cream colour, and the muciperous glands which cover its inner surface in a state of extreme follicular inflammation; this inflammation extending up the canal to the small intestines; but here its violence was much mitigated. The preparation of this case is now in the Wistar Museum marked A 102.10, which shews more fully since maceration the diseased appearance of those little glands.

Besides the case above alluded to, the Doctor has placed in the Museum preparations from several similar cases, shewing the inflammation in these muciperous glands or follicles, from the slight blush of simple erythema confined to the colon where the disease was of short duration, up to the more advanced stages of follicular inflammation where the disease was of longer standing, here in some cases confining its limits to the large intestine, but in others extending the whole tract of the alimentary canal; from these, and many similar cases which the Doctors extensive opportunities have brought to view, he is inclined to believe that Cholera Infantum

has its origin in the Colon; that is,— "it commences in an inflam-
-mation primarily of the mucieperous glands of this part of the
intestine extending secondarily to other parts of the tube, finally
engendering morbid actions of the stomach, liver &c"—. Should
this Theory stand the test of observation and further experiment,
it will throw fresh light on some of the dark and most inveterate
diseases which the physician has to contend with, it will teach
us in directing our curative means in bowel complaints more to
the diseased organ itself, thus removing the source of primary
irritation, which to do should prove a desideratum in all
affections. —

Treatment

In approaching the Treat-
-ment of cholera infantum our attention is early called to allay
the violent vomiting and purging, which important indication
is generally accomplished by getting rid of the offending matter.
As regard, however, the precise practice to be followed in this case,
there is not the same unanimity, though generally purgatives
are employed in preference to emetics. Of these a dose of castor

oil either alone, or in combination with a small quantity of laudanum appears to answer well in the milder forms of the disease. But so distressing in some cases are the effects of the gastric irritability, that it is impossible to get such medicines to be retained sufficiently long to produce their desired effects; here we are under the necessity of resorting at once, to such means as are calculated to allay its violence, as lime water with milk, a strong infusion of coffee without sugar or cream, a solution of the bi-carbonate of potassa, adding a few drops of laudanum or paregoric elixir, seltzer water, lemonade, anodyne enema, fomentations, warm bath, and in some cases after other means have failed a few leeches applied to the epigastrium, have been attended with most happy effects. These failing our next resort is to Calomel given in minute doses, as the 1/2, 1/4, 1/8, or even the 1/10 of a grain every hour, or half hour, as recommended by Dr Dewees, — Having succeeded in calming the gastric irritability, we next have recourse to the evacuation of the bowels by means of purgatives, for this purpose Castor Oil, magnesia or senna with some carminative wile answer well, but what perhaps wile be found better, is calomel in larger doses either alone

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or in combination with a small proportion of opium, as it will operate more effectually in allaying any spasm which may happen to exist, and also more liable to be retained on the stomach.

In the commencement of this com=plaint, if there be much febrile excitement and especially if the child be of a plethoric habit, venesection is demanded, in relieving congestion of the liver and portal circulation, and by obviating a tendency to inflammation in other important organs, as the brain &c &c. We thus prepare the way for the more speedy and effectual operation of other remedies. Nevertheless the lancet must be "operated with judgment, and tempered with discretion"; topical venesection or the application of leeches over the stomach has been found productive of the most signal bene=fit.

The practice above laid down will not be found altto=gether uniform, for says Professor Chapman "When there are besides the gastric irritability and vomiting, great pain about the umbili=cus, and a quick irritable pulse, it becomes necessary to premise an emetic;"— which has been further corroborated by a late writer,

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Doctor Cartwright of Natchez, who speaks of emetics as particularly useful when together with the above symptoms, there is an ataxic or broken reaction, indicated by an unequal distribution of temperature &c. By exhibiting an Emetic in this stage, he says, "it not only cleanses the stomach, produces a secretion of bile, removes the plethora of the Portal system, and the congestion of any one or more of those viscera, from which the abdominal vena porta arises, but likewise determines the fluids to the surface, produces a soft state of the skin, equalizes the circulation, and prevents the subsequent formation of visceral congestion" This practice of using emetics may be useful even in the subsequent stages, by the influence they exert on the liver &c, but it is chiefly so in the commencement, when by cleansing the stomach of its morbid secretions, which are always present, it thereby removes a source of much irritation, however their use is contra indicated, when there is much phlogosis of the stomach, or in cases of extreme emaciation.

But it is in Calomel we chiefly confide as possessing properties that eminently adapt it to this disease". Mer=

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=cury penetrates to the inmost recesses of this disease and disarm=
=ing it of all malignity, effectuates a cure at once radical, du=
=rable and complete" — such was the language of the late pro=
=fessor Miller, and it is evident from the Pathology of this com=
=plaint, that while the irritation and derangement of the hepatic
apparatus still continues, all our endeavours must be consider=
=ed as palliative; why should we strike at the branches while
the root remains untouched? — It, therefore, early behoves us
to correct the disordered action of the liver and remove the
congested state of that organ. Calomel by its specific action
on the Hepatic system, is said" to possess the power of increasing the
biliary secretion when deficient, and of lessening it when excessive."
Now to obtain the first of these properties is just what in this case
is desirable, for it is plain, if we can renew the secretory funct=
=ion of the gland, we restore its healthy action, and thereby not
only relieve it of the congestion, but alter the diseased impression
of the external surface depending upon its derangement; The
effects of Mercury are not to be estimated solely from its purgative
quality, but by its specific action on the hepatic system, and

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its power of affecting secreting surfaces endowed with irritability, and in a state of inflammation. Exhibited in doses so regulated as to obtain its specific action, and to produce an alterative effect only, either alone, or combined with ipecacuanha, and opium, this medicine will rarely fail to procure bilious stools, the precursors of a better state of things; to calm irritation, and to determine to the surface. As soon then, as two or three bili=ous stools have taken place, we find the heat abating and the skin inclined to be moist. These symptoms manifesting a tendency to a restoration of a due balance of action, should never be lost sight of, for if the purgative be followed up by others, or if it be permitted to operate excessively, it will undo the very work it has been doing, viz, destroy the equili=brium which it has been instrumental in producing; so soon then as these symptoms of a return of a loss of balance occur, as an abatement of heat, restlessness &c - and on the discharge of bili=ous matter from the bowels, the purgative action should be suspended, or at least moderated, and the dermoid secernets excited into action by some gentle diaphoretic. Until this

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important Crisis takes place, all our endeavours to arouse anew the energies of the cutaneous vessels will prove abortive; great relief however may be obtained by the frequent use of the tepid bath, "bearing in mind the intimate sympathy between the external surface of the body, and the internal surface of the alimentary canal, it will also be found an important remedy to sooth the irritability; and when we wish to make a powerful impression on the surface it should be impregnated with common salt, brandy, mustard &c-

During the continuance of this disease, there will be as a necessary consequence repeated accumulations of morbid matter in the intestines; as these would but increase and aggravate the violence of the complaint, it is necessary that they should from time to time be evacuated, This may be accomplished by the exhibition of Castor oil, rhubarb, and the milder aperients, not too often repeated, as the frequent use of purgatives are apt to increase the already excessive irritation, and should therefore be carefully avoided.

Cholera Infantum is some times accom=

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panied with much phlogosis, presenting itself under the mask of dysentery, marked by much fever, hard pulse, griping and tenesmus;- here we must not loose sight of the character of the inflammation. venesection is demanded assisted by topical bleeding, for this leeches are preferable which in some cases supercede the use of general depletion, with the occasional use of cold barley water enemata; in some instances, to this last, the addition of a little opium. It is in this form of the disease that determinations to the head are most apt to take place, should this be the case, supposing sanguine depletion to have been premised, we next resort to revulsive applications; apply cold to the head and a blister to the nape of the neck, with sinapisms on the soles of the feet, the stomach prepared much good will be derived from a Mercurial purge, the repetition of which will depend on the character of the alvine evacuations.

As acidity is a common symptom in this complaint, so alkaline and absorbent medicines are necessary. Minute doses of magnesia usta, or a solution of a

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carb of either of the fixed alkalies, will be found useful an=
=tacids. Blisters are serviceable at any stage of the disease
and should be applied over the epigastrium or extremities,
according to the state of the case, and the most striking in=
=dications. To allay the excessive and almost indomitable thirst
more or less present in every instance, mucilaginous drinks,
given in small quantities at a time, and frequent repeated.

When the disease passes into the nature
of a diarrhoea, which is sometimes attended by tormina and
tenesmus, the testaceous and cretaceous juleps are necessary,
assisted by emolient, and anodyne injections for the latter
symptoms. Injections of gruel and oil with some lauda=
=num, are very useful not only in allaying irritability of
the rectum and colon, but by washing away the remains
of irritating secretions from these parts.

The sugar of lead as a remedy in
several affections of the bowels, combined with a small portion
of ipecacuanha when it is desirable to act on the surface,
given alone or in conjunction with opium, is said to

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effect a removal of pain, relieve tormina &c. and has been much used in this complaint, particularly when the bowels are very irritable attended with frequent bloody stools.

Cholera sometimes passes into the nature of a colliquative diarrhœa, arising from mere relaxation and debility; in this case Astringents are generally employed, but in resorting to this class of medicines; first, satisfy ourselves there is no inflammation or hepatic congestion existing. the astringents of common use are, creta prep and tinct kino, alum, catechu, galls, logwood, copperas, geraneum maculatum, sacch saturni, &c &c. But what is preferable is an infusion of the dew or blackberry root, decoction of the pomegranite bark, or as used by Dr Physick, an infusion of the dogwood bark; with most of these, laudanum will be found a valuable addition, terebinthinate prep.ns and common resin are said to be very effectual in restraining the mucous discharges.

As an adjuvant a flannel shirt wet fitted, with due attention to cleanliness, or perhaps better, as first used by Dr. Chapman, a flannel bandage around the

abdomen, which will prove not only a defender from cold and humidity, but will curb the action of the abdominal muscles, and tend to keep the intestines quieter. This brings us to the consideration of the regimen. It's recommended to confine the child to its mothers milk, and if weaned to procure a wet nurse, as nothing is better than humane milk, which of itself has been known to put a stop to the ravages of this disease, if the child will not take the breast, the diet should consist in the early stage of rice or barley water and milk; but the disease a little further advanced we may allow a more nutritious diet as, arrow root, sago, tapioca, rice or boiled flour, with a proper proportion of new milk. Care should be taken should be taken that the stomach be not overloaded by the quantity of food taken; as a general rule, meats of all kind are inadmissable except in extreme debility of the stomach and bowels "when a little ham or salt fish may be allowed in order to create a desire for food.

Whatever may be our exertions, and notwithstanding all our boasted remedies in this disease, I regret to add that often ale are administered without putting an end

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to its ravages, so long as the child continues exposed to the operation of the causes which were instrumental in its production. Attention therefore should early be paid to a removal to the country as the only sovereign remedy. When the convenience of a country residence cannot be obtained, evident advantage has been derived from frequent changes of air, as taking the child out of the city one or two days, by frequently crossing a river in an open boat or riding out in an open carriage; Dr Chapman condemns this practice during the hight of the disease. and thinks a removal to the country at this particular time would be of no benefit, but highly recommends it during convalescence.

Considering it as the office of the physician, not only to devise remedies for the ever varying forms of diseases already established, but also to trace back to their source the springs of evil, and prevent their further flow; with these views I shall mention by way of conclusion the measures which common experience has found the best Prophylaxis to this complaint.

1st. Never permit the child to be weaned within the year, as no food

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is so salutary as the natural milk.

2nd Let the cold bath be daily employed, used in the morning, but with care not to use it immediately upon the childs rising from bed when in a perspiration, care also that there be no efflorescence on the skin.

3rd Attention to the dress of children, direct the wearing of flannel next to the skin and worstead stockings.

4th Attention to diet, The proper food for an infant within the year, is its mothers milk, but if weaned should be fed on milk and on farinaceous substances boiled, after a few months, provided it has teeth, a small portion of salted animal food should occasionally be allowed.

5th During dentition, the teeth should be frequently examined if swelled or inflamed lance the gums.

6th Attention to cleanliness.

7th Let the child above all be removed to the country on the approach of warm weathe.

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